

METHOD FOR THE WIRELESS AND REMOTE TRANSMISSION AND RECEPTION OF CODED INFORMATION, VARIANTS AND PORTABLE DEVICE FOR REALISING THIS METHOD

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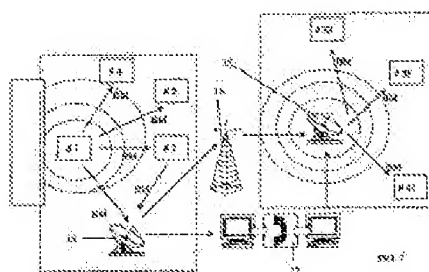
US6424819 (B1)

CA2302548 (A1)

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Abstract of EP 1059742 (A1)

This invention relates to radio engineering, and in particular it concerns a method of establishing contact between users. The method consists in that, in a portable computerized device combined with a radio transceiver, data comprising an array of coded information, which is, upon conversion, assigned a personal code, is inputted into the memory. Then, this code is transmitted in the form of pulsed radio signals through the propagation medium for reception thereof by other devices operating within the range of the first device. Upon reception of pulsed code radio signals transmitted by other devices, the codes received are compared with the personal code, and when one of the codes received is found to coincide with the personal code, the received data corresponding to that code is decoded and outputted for visual or audio perception of the information array corresponding to that code. On coincidence, a pulsed coincidence radio signal is transmitted in the coincidence code and a response pulsed radio signal in the personal code is received for the users to identify one another. Following reception of the pulsed personal code radio signals confirming establishment of direct contact, the users' devices are switched to a direct communication mode for the users to communicate with each other. In the absence of coincidence between the codes received and the personal code, these codes are inputted into the memory and transmitted into the propagation medium, transmission being effected during the absence of a pulsed radio signal carrying the code corresponding to the personal code.



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**SUPPLEMENTARY
EUROPEAN SEARCH REPORT**

1059742

Application Number
EP 99 91 7262

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	WO 97 49192 A (CALIENDO GIOVANNI ;AGNETELLI FABIO (IT)) 24 December 1997 (1997-12-24) * claim 1 * * page 2, line 9 - line 12 * * page 5, line 1 - line 13 * * page 19, line 1 - page 20, line 16 * ---	1-7	H04B7/26 H04Q7/38 G01S13/74 G08B1/08
A	DE 93 13 236 U (KLOSS HARTMUT DIPL ING) 27 January 1994 (1994-01-27) * page 1 - page 6 * ---	1-7	
P,A	DE 298 18 638 U (MESZAROS ARPAD G DIPL ING) 11 February 1999 (1999-02-11) * the whole document * ---	1-7	
A	WO 98 38607 A (GEBHARD MARCUS) 3 September 1998 (1998-09-03) * abstract * ---	1	
A	WO 90 13828 A (WILVERLEY MANSION I B V) 15 November 1990 (1990-11-15) * abstract * ---	1	TECHNICAL FIELDS SEARCHED (Int.Cl.7) G08B G01S
A	FR 2 615 957 A (DUPUCH CHARLES) 2 December 1988 (1988-12-02) * abstract * ---	1-7	
A	WO 94 28641 A (RAUTIO JOUKO ;FINLAND TELECOM OY (FI)) 8 December 1994 (1994-12-08) * abstract * ---	1-7	
A	US 4 173 016 A (DICKSON CARLISLE H) 30 October 1979 (1979-10-30) * abstract * -----	1-7	
The supplementary search report has been based on the last set of claims valid and available at the start of the search.			
Place of search THE HAGUE		Date of completion of the search 21 March 2001	Examiner Ó Donnabháin, C
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			



CLAIMS

1. A method of wireless remote transmission and reception of code information by users to seek and identify one another, wherein, in a portable computerized device combined with a radio transceiver, data representing at least one array of generated information is inputted into the memory; the data in each information array is then converted into a personal code; at least one personal code is transmitted in the form of pulsed radio signals through the propagation medium to be received by the radio transceiver of at least one other portable computerized device operating within the range of the radio transceiver of the first device; the pulsed code radio signals emitted by the radio transceivers of the other portable computerized devices are received; the codes received are compared with at least one personal code; on coincidence of at least one of the codes received and the personal code in at least a majority of the data, the received data corresponding to that code is decoded and outputted for visual or audio perception of the information array corresponding to that code; on coincidence of the information array received and the information array stored in the memory, a pulsed coincidence radio signal is transmitted in the coincidence code to establish direct contact with the user of that code, and a response pulsed personal code radio signal confirming the establishment of direct contact is received for the users to identify one another, *characterized in that*, after the pulsed personal code radio signals confirming the establishment of direct contact have been received, the users switch their radio transceivers to a direct communication mode to enable the users to communicate with each other, while in the absence of coincidence between the codes received and the personal code, these codes are inputted temporarily into the memory and pulsed radio signals of these codes are emitted, at least once or several times during a specified time interval, into the propagation medium, the pulsed radio signals of the codes that do not coincide with the personal code being transmitted at least during the absence of a pulsed radio signal carrying a code corresponding to the personal code in at least a majority of data.

2. A method of remote wireless transmission and reception of code information for users to establish contact with one another, wherein, in a portable computerized device of a first user combined with a radio transceiver, data representing at least one array of generated information is inputted to the memory; the data in this information array is then converted into a personal code of the user; the first user's personal code is transmitted in the form of pulsed radio signals through the propagation medium to be received by the radio transceiver of another portable computerized device of a second user, operating within the range of the radio transceiver of the first device; the pulsed code radio signals emitted by the radio transceivers of the portable computerized devices of other users are received; the codes received are compared with the personal code to detect a radio signal carrying a code corresponding to the personal code of the user; on coincidence of one of the received codes of other users and the personal code, the received data corresponding to that code is decoded and outputted for visual or audio perception thereof, *characterized in that*, on coincidence the radio transceivers of both users are switched to the mode of direct communication between the users, and in the



absence of coincidence between the codes received and the personal code of the user, the codes of the other users are inputted temporarily into the memory, and the pulsed radio signals of these codes are transmitted, at least once or several times during a specified time interval, into the propagation medium to be received by the radio transceivers of the other portable computerized devices or repeaters operating within the range of at least one radio transceiver or repeater emitting pulsed code radio signals, for these radio signals to be then retransmitted; the radio transceivers of each portable computerized device retransmitting the pulsed radio signals of the codes, which do not coincide with the personal code, at least during the absence of a pulsed radio signal carrying a code corresponding to the personal code, the radio signals being retransmitted from one radio transceiver of a portable computerized device to another stationary or mobile radio transceiver of a portable computerized device or repeater via the radio transceivers of portable computerized devices or repeaters moving relative to them and with respect to one another.

3. A method of claim 2, *characterized in that*, when an information array received in a code is found to correspond to the information array stored in the memory, a pulsed coincidence radio signal is transmitted in the coincidence code to establish direct contact with the user of that code and a response pulsed personal code signal confirming the establishment of direct contact is received.

4. A method of claim 2, *characterized in that*, following the transmission of a pulsed coincidence radio signal and a pulsed response radio signal, transmission of radio signals in these codes is terminated.

5. A method of claim 2, *characterized in that*, following the transmission of a pulsed coincidence radio signal and a pulsed response radio signal, transmission of radio signals in these codes is terminated and the device is switched to a radio communication mode or video data transmission mode, or a telephone communication mode, or to a computer network communication mode.

6. A method of remote wireless transmission and reception of code information, wherein, in a portable computerized device of a first user combined with a radio transceiver, data representing an array of generated information prepared for another user is inputted into the memory; the data is converted into a personal code; the personal code of the first user is transmitted in the form of pulsed radio signals through the propagation medium to be received by the radio transceiver of another user's portable computerized device operating within the range of the radio transceiver of the computerized device of the first user; the pulsed code radio signals emitted by the radio transceivers of the portable computerized devices of other users are received; the codes received are compared with the personal code to detect a radio signal carrying a code corresponding to the personal code of the first user; on coincidence of one of the codes received from the other users and the personal code of the first user, the received data corresponding to that code is decoded and outputted for perception thereof, *characterized in that*, for the code information to be transmitted to distances exceeding the effective range of the radio transceiver of the computerized device of the first user,



the radio transceivers of the computerized devices of the other users, operating within the range of the radio transceiver of the computerized device of the first user, in the absence of coincidence between the received code of the first user and the personal code, the personal code of the first user is inputted temporarily into the memory; an additional non-coincidence and transmission code is assigned thereto, and pulsed radio signals of that code are then transmitted once or during a specified time interval into the propagation medium to be received by the radio transceivers of the portable computerized devices of the users or repeaters operating within the range thereof, for these radio signals to be then retransmitted; the radio transceivers of each portable computerized device retransmit the pulsed radio signals of the codes, which do not coincide with the personal code, at least during the absence of a pulsed radio signal carrying a code corresponding to the personal code, the radio signals being retransmitted from one stationary radio transceiver of the portable computerized device or repeater to another stationary radio transceiver of the portable computerized device or repeater through the radio transceivers of portable computerized devices or repeaters moving relative to them and with respect to one another.

7. A portable device for remote wireless transmission of code information, comprising a radio transceiver having a receiving part to receive pulsed input radio signals; a transmitting part to transmit pulsed output signals to the propagation medium; a processor associated with these parts and forming, together with a memory unit and a software unit, a digital-to-analog and analog-to-digital converter unit, and an input-output unit, a minicomputer, having a display to visually represent the information received and transmitted; a unit to input data into the memory unit of the computer, and an announcing unit to output audio signals, wherein the mini-computer is provided with suitable software to perform the functions of receiving analog signals from the receiving part, convert them into digital signals, compare the data carried by these signals with the data stored in the memory unit, process a digital signal carrying data in a code corresponding to the personal code stored in the memory unit and the data inputted from a keyboard to form personal codes, convert the digital signals into analog signals, and output an analog signal confirming reception of coincidence code data to the transmitting part to transmit the same through the propagation medium within the framework of a single protocol, *characterized in that*, the mini-computer is capable of performing an additional function of inputting digital signals of codes that do not coincide with the personal codes stored in the memory unit temporarily into the memory unit and outputting these signals to the transmitting part to transmit the pulsed radio signals of codes that do not coincide with the personal code through the propagation medium during at least the absence of a pulsed radio signal carrying the code corresponding to the personal code, and the radio transceiver of the device is adapted to be connected to a wire or wireless telephone communication system, or a computer communication network, or to a radio communication network.